

TECHNICAL DATA SHEET

Product Name: Witch Hazel Extract

INCI Name: Glycerin, Aqua, Hamamelis Virginiana Leaf Extract, Benzyl Alcohol, Dehydroacetic Acid

CAS Numbers: 56-81-5, 7732-18-5, 84696-19-5, 100-51-6, 520-45-6

Botanical Name: Hamamelis virginiana L.

Chemical Classification: Mixture

Functional Category: Skin conditioning agent, hair conditioning agent, humectant, emollient

Extraction Method: The extract is obtained by ultrasonic extraction using ultrasound frequencies between 20 and 25 kHz. At these frequencies, ultrasonic waves create microscopic bubbles in the liquid containing plant material, leading to a phenomenon known as cavitation. Cavitation generates extreme conditions of locally elevated pressure and temperature in the microenvironment around the imploding bubbles. This effect mechanically disrupts plant cell walls, releasing intracellular active compounds and significantly increasing the speed and efficiency of extraction. The process is carried out at 25 °C to preserve the stability of thermolabile constituents such as flavonoids, vitamins, and essential oils. Compared to conventional maceration methods, ultrasonic extraction allows shorter processing time, higher yield, and better utilization of plant material. The obtained extract is preserved with a combination of benzyl alcohol (0.86%) and dehydroacetic acid (0.14%), a system approved for use in natural cosmetics and certified by ECOCERT and COSMOS. The extract is water-soluble, enabling easy incorporation into various water-based cosmetic formulations. The pH value of the finished extract ranges from 4.0 to 6.5, making it suitable for most dermal applications without additional pH adjustment.

Extract Description: Witch Hazel Extract, derived from the bark and leaves of Hamamelis virginiana, originates from North America and has been used for centuries for its medicinal properties. In cosmetics, it is highly valued for its astringent, soothing, and anti-inflammatory effects. The extract is rich in tannins, especially hamamelitannin and proanthocyanidins. Tannins provide astringent properties, giving the skin a tightening

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effect. It also contains flavonoids such as quercetin, kaempferol, and epicatechin, which act as antioxidants and anti-inflammatories, protecting the skin from oxidative stress and improving its condition. Gallic acid, a phenolic acid, contributes to antioxidant and anti-inflammatory activity by neutralizing free radicals. Catechins, a type of flavonoid, provide strong antioxidant protection, shielding the skin from UV radiation and environmental pollutants. Proanthocyanidins also deliver anti-aging benefits by stimulating collagen synthesis and reducing fine lines and wrinkles. Natural polyphenols tighten pores and reduce excess sebum, making the extract ideal for oily and problematic skin. Commonly used in toners, lotions, and serums, it minimizes pore visibility and regulates oil production. Witch hazel also has calming properties, effectively reducing redness and irritation, and is useful in cases of allergies and environmental skin damage. It soothes insect bites, minor burns, and small wounds. The extract is light yellow, odorless, and water-soluble.

Bioactive Compounds: Witch Hazel Extract (*Hamamelis virginiana*) is rich in natural tannins such as hamamelitannin and gallic acid, which exert astringent effects by tightening pores, reducing redness, and regulating sebum secretion making it ideal for oily and acne-prone skin. It also contains flavonoids like quercetin and kaempferol, which provide strong antioxidant protection and soothe irritated skin. Proanthocyanidins, organic acids (chlorogenic and ferulic), and traces of essential oils contribute to regeneration and mild antiseptic activity. The presence of triterpenoids, such as ursolic and oleanolic acids, further supports anti-inflammatory and restorative effects. Thanks to this complex composition, witch hazel extract acts as a soothing, purifying, and protective agent, especially beneficial in formulations for acne-prone, sensitive, and irritated skin.

Benefits:

- Tightens skin and reduces the visibility of pores, leaving it smooth
- Soothes irritated skin, reducing redness and swelling
- Protects the skin from free radicals and premature aging
- Regulates sebum secretion and removes excess oil and impurities
- Suitable for sensitive skin, rarely causing irritation
- Balances skin pH when used as a toner
- Reduces puffiness and refreshes tired skin
- Relieves discomfort and refreshes skin after sun exposure

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Usage: Witch hazel extract is used in various cosmetic products, with concentrations adjusted to the product type and purpose. In facial toners, recommended usage is 10–20%, with possible dilution using water or hydrosols for sensitive skin types. In serums or creams for oily and problematic skin, concentrations typically range from 5–15% to maximize astringent properties. In body lotions and creams, it can be used at 2–10%, especially for soothing irritation or refreshing skin after sun exposure. In gels or compresses for burns, usage ranges from 10–20%, depending on desired intensity. For formulations intended for sensitive areas such as the skin around the eyes, careful dosing up to 5% is recommended to minimize irritation. Regardless of the product type, witch hazel extract is often combined with hydrating and soothing ingredients such as allantoin or panthenol for improved tolerance and enhanced calming effects. During formulation, it is important to maintain a skin-friendly pH of 4.5–5.5. The extract is added to the water phase. For external use only.

Animal Testing: Not tested on animals

GMO Status: Non-GMO

Vegan: Does not contain animal-derived components

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